IN THE CLAIMS:

1. (Cancelled) An apparatus that provides at least one estimated effective age of a product during the entire life of the product, comprising:

at least one sensor equipped on the product that provides data about an environmental condition;

a device equipped on the product that uses said data to calculate an age acceleration factor for said product for at least one of said sensors;

at least one accumulator equipped on the product that provides the estimated effective age for said product, based upon said age acceleration factor; and

a display equipped on the product capable of presenting said estimated effective age to a user of said product.

2. (Cancelled) The apparatus of claim 1, wherein said sensor includes an analog to digital conversion function, and wherein said device that uses said data to calculate an age acceleration factor is a digital processor.

3. (Cancelled) An apparatus that provides at least one estimated effective age of a product during the entire life of the product, comprising:

at least one sensor equipped on the product that provides data about an environmental condition, the sensor further includes an analog to digital conversion function;

a device equipped on the product that uses said data to calculate an age acceleration factor for said product for at least one of said sensors, said device is a digital processor programmed to use said data to calculate an Arrhenius estimation of said age acceleration factor;

at least one accumulator equipped on the product that provides the estimated effective age for said product, based upon said age acceleration factor; and

a display equipped on the product capable of presenting said estimated effective age to a user of said product.

4. (Cancelled) The apparatus of claim 2, wherein said digital processor is programmed to compute a Coffin-Manson estimate of age acceleration.

5. (Cancelled) The apparatus of claim 2, wherein said digital processor is programmed to compute a Hallberg-Peck estimate of age acceleration.

6. (Cancelled) The apparatus of claim 2, wherein said accumulator is at least partially implemented in nonvolatile storage.

7. (Cancelled) The apparatus of claim 6, wherein said nonvolatile storage is a ferroelectric memory.

8. (Cancelled) The apparatus of claim 6, wherein said nonvolatile storage is a flash memory.

9. (Cancelled) The apparatus of claim 6, wherein said nonvolatile storage is a hard disk.

10. (Cancelled) The apparatus of claim 6, wherein said nonvolatile storage is a volatile memory element, with continuity of power provided by a battery

11. (Cancelled) The apparatus of claim 1, wherein said sensor produces an analog voltage output, said analog voltage output varying substantially linearly responsive to a change in temperature, wherein said voltage output is said data.

12. (Previously presented) An apparatus that provides at least one estimated effective age of a product during the entire life of the product, comprising:

at least one sensor equipped on the product that produces data in the form of an analog voltage output that varies substantially linearly responsive to a change in temperature;

a device equipped on the product that uses said data to calculate an age acceleration factor for said product for at least one of said sensors, said device is a VCO, said VCO producing a VCO output signal having a frequency that varies substantially exponentially responsive to a linear voltage change on an input of the VCO;

at least one accumulator equipped on the product that provides the estimated effective age for said product, based upon said age acceleration factor; and

a display equipped on the product capable of presenting said estimated effective age to a user of said product.

13. (Previously presented) The apparatus of claim 12, wherein said accumulator is a counter; said counter being implemented, at least in part, in a nonvolatile or effectively nonvolatile technology, and wherein said counter is clocked by the VCO output signal.

14. (Original) The apparatus of claim 13, wherein said display is electrically coupled to selected bits of said counter.

15. (Cancelled) A method for producing one or more estimates of effective age of a product, during the entire life of the product, comprising the steps of:

sensing, using a sensor equipped on the product one or more environmental conditions;

computing, using a computer equipped on the product, an age acceleration factor for each of the environmental conditions sensed, using a model that relates the environmental condition to the age acceleration factor;

computing, using the computer equipped on the product, effective age values, using said acceleration factors;

storing, using a storage equipped on the product, said effective age values into nonvolatile storage; and

displaying, using a display equipped on the product, said effective age values to a user of said product on a display.

16. (Cancelled) The method of claim 15, wherein the step of computing an age acceleration factor comprises the use of the Arrhenius equation, the Hallberg-Peck equation, or the Coffin-Manson equation.

17. (Cancelled) The method of claim 15, wherein the step of computing effective age values further comprises the steps of:

time integrating the age acceleration factor for each of the environmental conditions sensed, resulting in an effective age for the product according to each said model;

computing a normalized effective age for some or all of the effective ages by dividing the instant effective age by a wall clock age;

computing an effective life used value for some or all of the effective ages by dividing the instant effective age by a predetermined estimate of life of the product; and

computing an effective life remaining value for some or all of the effective ages by subtracting said effective life used value from "1".

18. (Cancelled) The method of claim 15, wherein the step of displaying said effective age values further comprises the steps of:

determining if any of said values are outside of predetermined ranges; and

alerting the user if any of said values are outside of predetermined ranges by lighting a light, sounding an audible alarm, or presenting said values on said display.

19. (Previously presented) An apparatus that provides at least one estimated effective age of a product comprising:

at least one sensor that provides data about an environmental condition;

a device that uses said data to calculate an age acceleration factor for said product for at least one of said sensors;

at least one accumulator that provides the estimated effective age for said product, based upon said age acceleration factor; and

a display capable of presenting said estimated effective age to a user of said product;

wherein the at least one sensor includes an analog to digital conversion function, and wherein said device that uses said data to calculate an age acceleration factor is a digital processor wherein said digital processor is programmed to compute a Hallberg-Peck estimate of age acceleration.

20. (Previously presented) A method for producing one or more estimates of effective age of a product, comprising the steps of:

sensing one or more environmental conditions;

computing an age acceleration factor for each of the environmental conditions sensed, using a model that relates the environmental condition to the age acceleration factor;

computing effective age values, using said acceleration factors;

storing said effective age values into nonvolatile storage; and

displaying said effective age values to a user of said product on a display;

wherein the step of computing an age acceleration factor comprises the use of the Arrhenius equation, the Hallberg-Peck equation, or the Coffin-Manson equation.

21. (Previously presented) A method for producing one or more estimates of effective age of a product, comprising the steps of:

sensing one or more environmental conditions;

computing an age acceleration factor for each of the environmental conditions sensed, using a model that relates the environmental condition to the age acceleration factor;

computing effective age values, using said acceleration factors;

storing said effective age values into nonvolatile storage; and

displaying said effective age values to a user of said product on a display;

wherein the step of computing effective age values further comprises the steps of:

time integrating the age acceleration factor for each of the environmental conditions sensed, resulting in an effective age for the product according to each said model;

computing a normalized effective age for some or all of the effective ages by dividing the instant effective age by a wall clock age;

computing an effective life used value for some or all of the effective ages by dividing the instant effective age by a predetermined estimate of life of the product; and

computing an effective life remaining value for some or all of the effective ages by subtracting said effective life used value from "1".